

REMARKS

Claims 1-14, as amended, remain herein.

Applicant thanks the Examiner for acknowledging that claims 4, 5, 7, 9, 10 and 13 contain allowable subject matter. For the reasons stated below, Applicant believes the remaining claims are also allowable.

1. The claims were objected to for an allegedly improper claim order. However, the Office Action states that "In general, applicant's sequence will not be changed." Accordingly, withdrawal of the objection is respectfully requested.

2. Claim 14 has been amended, mooting the rejection thereof under 35 U.S.C. § 112, second paragraph.

3. Claims 1, 3 and 11 were rejected under 35 U.S.C. § 102(a) over Applicant's admitted prior art (AAPA). But, the AAPA fails to disclose a first factor computation device for receiving as input signals a first signal from an analog-digital conversion device, a second signal from a first digital equalization device, and a fourth signal from an equalization target value generation device, and for computing tap factors of the first digital equalization device from the first, second, and fourth output signals, as recited in Applicant's claims 1 and 11. (Claim 11 recites second, fourth, and fifth signals corresponding to sampled signals, phase-synchronized signals, and an equalization target value.)

The Office Action asserted that the temporary factor computation means corresponds to the first factor computation device of applicant's claims. However, the temporary factor computation means receives signals from a phase synchronization means and a temporary target value generation means, not from the analog-digital conversion device, the first digital equalization device, and the equalization target value generation device, as recited in claim 1, and the corresponding signals in claim 11. Since the AAPA fails to disclose every element of claims 1 and 11, it is an inadequate basis for rejecting claims 1, 3 and 11 under 35 USC § 102 (a). Reconsideration and withdrawal of the rejection are respectfully requested.

4. Claims 2, 6 and 12 were rejected under 35 U.S.C. § 103(a) over the AAPA and Miyashita U.S. Patent Application Publication 2002/0067677. As discussed in Section 3, above, the admitted prior art fails to disclose every element of claim 1, from which claims 2 and 6 depend. Miyashita fails to disclose what claim 1 lacks. Miyashita fails to disclose a first factor computation device for receiving as input signals a first signal from an analog-digital conversion device, a second signal from a first digital equalization device, and a fourth signal from an equalization target value generation device, and for computing tap factors of the first digital equalization device from the first, second, and fourth output signals. Miyashita also fails to disclose the above limitations.

Regarding amended claim 12, the AAPA fails to disclose computing tap factors for said waveform equalization from sampled second signals, waveform-equalized third signals, and a sixth signal corresponding to the true target value. Rather, according to the admitted prior art,

tap factors are determined using phase-synchronized signals corresponding to the input signals to a first digital equalization means, as well as signals from a phase synchronization means and a temporary target value generating means. Phase-synchronized signals corresponding to the input signals to a first digital equalization means are not sampled second signals, as defined in Applicant's claim 12.

Nor would it have been obvious to one of ordinary skill in the art to modify or combine the cited references to render obvious Applicant's claims. Nothing in either the admitted prior art or Miyashita would have provided any motivation to compute tap factors for a waveform equalization from sampled second signals, waveform-equalized third signals, and a signal corresponding to the true target value. For the foregoing reasons, the AAPA and Miyashita are inadequate grounds for rejecting Applicant's claims 2, 6 and 12 under 35 U.S.C. § 103(a). Reconsideration and withdrawal are respectfully requested.

5. Claim 8 was rejected under 35 U.S.C. § 103(a) over the AAPA and Koike U.S. Patent 6,246,864. For the reasons stated above, the AAPA fails to disclose every limitation of claim 1, from which claim 8 depends. Koike fails to provide what the admitted prior art lacks. Koike fails to disclose a first factor computation device for receiving as input signals a first signal from an analog-digital conversion device, a second signal from a first digital equalization device, and a fourth signal from an equalization target value generation device, and for computing tap factors of the first digital equalization device from the first, second, and fourth output signals.

Koike further fails to disclose a first factor computation device that supplies computed tap factors to a first digital equalization device and performs adaptive equalization regardless of whether phase synchronization performed by the phase synchronization device is in an unlock status. The Office Action cites Koike, which detects a lockup of a phase locked loop and bypasses one band-pass filter to input a signal from a phase comparator and a charge pump of the phase locked loop into a second band-pass filter. However, bypassing a band-pass filter in a circuit with a phase locked loop is not the same as supplying computed tap factors to a first digital equalization device and performing adaptive equalization regardless of whether phase synchronization performed by the phase synchronization device is in an unlock status, as recited in Applicant's claim 8.

Nor would it have been obvious to one of ordinary skill in the art to modify or combine the AAPA and Koike to render obvious Applicant's claim 8. Neither the AAPA nor Koike contains any disclosure that would have motivated one of ordinary skill to make such a modification. For the foregoing reasons, the AAPA and Koike are inadequate grounds for rejecting Applicant's claim 8 under 35 U.S.C. § 103(a). Reconsideration and withdrawal are respectfully requested.

6. Claim 14 was rejected under 35 U.S.C. § 103(a) over the AAPA and Rakib U.S. Patent Application Publication 2003/0156603. The AAPA fails to disclose a frequency information threshold device for judging frequency information of a phase synchronization device in a plurality of statuses using one or more threshold values, as recited in Applicant's

claim 14. The Office Action cites the “phase error detection means” as a “frequency information threshold device.” The phase error detection means judges an amplitude and status transition of a signal to determine a size and direction of a phase error. But neither amplitude nor status transition is “frequency information,” as recited in claim 14.

The AAPA further fails to disclose a memory for storing tap factors corresponding to the plurality of statuses judged by said frequency information threshold device respectively, as recited in claim 14. The Office Action asserts that Rakib discloses such memory. But, a memory for storing a tap correction factor, as disclosed in Rakib, is not the same as a memory for storing tap factors corresponding to the plurality of statuses judged by a frequency information threshold device. The memory of Rakib would have different connections corresponding to its different function than the memory in Applicant’s claim 14.

The AAPA further fails to disclose a status change factor supply device for supplying a tap factor corresponding to said status to said first digital equalization device when the status judged by said frequency information threshold device changes, as recited in applicant’s claim 14. The Office Action cites the temporary factor computation means as satisfying this limitation, but the AAPA contains no disclosure that the temporary factor computation means supply reacts to a change in a frequency information threshold device, as recited in claim 14.

Nor would it have been obvious to one of ordinary skill in the art to modify the AAPA and Rakib to render obvious Applicant’s claim 14. For the foregoing reasons, the cited references are inadequate grounds for rejecting claim 14 under 35 U.S.C. § 103(a). Reconsideration and withdrawal are respectfully requested.

Accordingly, all claims 1-14 are now fully in condition for allowance and a notice to that effect is respectfully requested. The PTO is hereby authorized to charge/credit any fee deficiencies or overpayments to Deposit Account No. 19-4293. If further amendments would place this application in even better condition for issue, the Examiner is invited to call applicant's undersigned attorney at the number listed below.

Respectfully submitted,

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